Installation Guide

NXB-KNX NetLinx KNX Interface

Overview

The NetLinx NXB-KNX (**FG2031-01**) allows AMX NetLinx Integrated Controllers the ability to control, integrate and communicate with homes and buildings that utilize the KNX communication protocol.

KNX is the world's first open, royalty free, and platform independent standard for home and commercial building control.

FIG. 1 NXB-KNX

Product Specifications

NXB-KNX Specifications	
Front Panel Components:	• Status LED (green): Blinks to indicate that the unit is communicating with the NetLinx Master. Any state other than blinking indicates the unit has not completed boot up. • KNX LED (green): Solid on indicates power is on and the unit is connected to the KNX bus. • Output LED (red): Lights to indicate traffic from the NXB-KNX to the KNX bus. • Input LED (yellow): Lights to indicate traffic from the KNX bus to the NXB-KNX.
Rear Panel Connectors:	• KNX 2-pin captive-wire connector (optically isolated) • Ethernet Port - 10/100 Ethernet with PoE. LEDs show communication activity, connection status, speeds, and mode information: SPD (speed) - Yellow LED lights On when the connection speed is 100 Mbps and turns Off when the speed is 10 Mbps. L/A (link/activity) - Green LED lights On when the Ethernet cables are connected and terminated correctly, and blinks when receiving Ethernet data packets.
Power Requirements:	• PoE powered – no local Power Supply needed • IEEE 802.3af Compliant
Memory:	• 64 Mbytes of RAM • 256 Mbytes of FLASH
Dimensions (HWD):	With feet: • 1.66" x 5.54" x 4.10" • 4.216 cm x 14.07 cm x 10.42 cm Without feet: • 1.52" x 5.54" x 4.10" • 3.861 cm x 14.07 cm x 10.42 cm
Weight:	1.45 lbs. (0.65 kg)
Operating Environment:	• Operating Temperature: 32°F - 104°F (0°C - 40°C) • Relative Humidity: 5% to 85% non-condensing • Intended for indoor use only
Included Accessories:	• Rubber feet • Green 2-Pin 5mm Phoenix connector with captive screws
Other AMX Equipment:	• AC-DIN-CS3 DIN Rail Mounting Bracket (FG532-01) • PS-POE-AF PoE Injector (FG423-80)
Certifications:	• FCC Class B • CE • IEC60950 • RoHS

Wiring and Connections

***Note**: To avoid any damage to the electronic component, installation must be performed in an ESD safe environment.*

***Note**: Do not connect power to the NXB-KNX until the wiring is complete.*

The NXB-KNX is installed between the NetLinx Master and the KNX control bus, and passes NetLinx control commands to the KNX control bus via 2-wire twisted pair cabling, as indicated in FIG. 2:

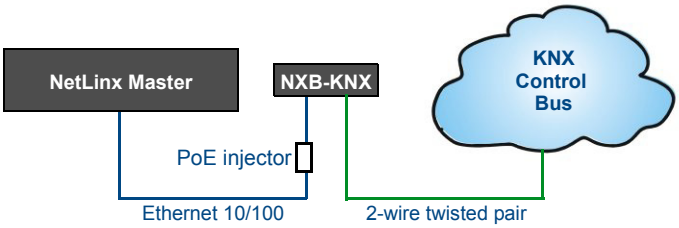

FIG. 2 NXB-KNX installation

After completing the installation, consult the Using the Configuration Manager section of the *NXB-KNX NetLinx Interface Operation/Reference Guide* for instructions on specifying IP and Security settings, via the NXB-KNX WebConsole.

Ethernet 10/100 Base-T RJ-45 Wiring Configuration

The table below describes the pinouts, signals, and pairing for the Ethernet 10/100 Base-T connector and cable.

Ethernet Pinouts and Signals				
Pin	**Signals**	**Connections**	**Pairing**	**Color**
1	TX +	1 --------- 1	1 --------- 2	White-Orange
2	TX -	2 --------- 2		Orange
3	RX +	3 --------- 3	3 --------- 6	White-Green
4	no connection	4 --------- 4		Blue
5	no connection	5 --------- 5		White-Blue
6	RX -	6 --------- 6		Green
7	no connection	7 --------- 7		White-Brown
8	no connection	8 --------- 8		Brown

PoE (Power Over Ethernet)

The NXB-KNX uses CAT5/CAT6 wire via the Ethernet port for PoE power.

Use the PS-POE-AF Power over Ethernet Injector (FG423-80) to simplify wiring and installation by eliminating the need for an AC outlet at each point of installation.

***Note**: The NXB-KNX can be placed up to approximately 330' (100 meters) from the nearest PoE Injector.*

- If used with a non PoE-capable Ethernet switch (such as the NXA-ENET24), then an optional PS-POE-AF Power-over-Ethernet (PoE) power supply is required to provide power to the NXB-KNX.
- If the NXB-KNX is used with a PoE-capable Ethernet switch (such as the NXA-ENET24PoE), then no PoE Injectors are required.

KNX Connector

The KNX connector on the rear panel is a 2-pin captive-wire connector (optically isolated) that provides communication between the NXB-KNX and the KNX control system via 2-wire shielded twisted pair cabling (FIG. 3).

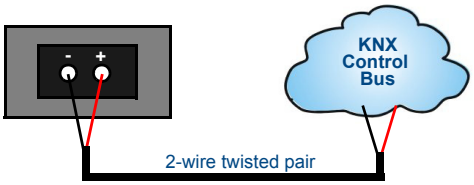

FIG. 3 KNX Connector wiring diagram

Configuration via WebConsole

NXB-KNX units have a built-in WebConsole that allows you to make various configuration settings via a web browser on any PC that has access to the Master.

NetLinx Studio v3.0 (featuring Zero-Config functionality)

NetLinx Studio version 3.0 (or higher) features a "Zero-Config" tab in the Workspace Window. This tab provides Zero-Config networking functionality within NetLinx Studio.

Refer to the NetLinx Studio online help for details on using Zero-Config.

Accessing the NXB-KNX WebConsole via Zero-Config

Assuming that the NXB-KNX resides on the same LAN as the PC running NetLinx Studio, and the NetLinx Master to which the NXB-KNX is connected, you can access the NXB-KNX via the Zero-Config feature in Netlinx Studio:

1. In NetLinx Studio (version 3.0 or higher), right-click inside the *Zero-Config* tab of the Workspace Bar to access the Zero-Config context menu.
2. Select **Refresh List** to generate an initial listing of all Zero-Config devices detected.
3. Click the plus symbol (+) to expand any device in the Zero-Config list. The device's current IP Address is listed below the device name.
4. You can access any device in the Zero-Config list simply by double-clicking on its entry. The selected device's WebConsole (HTML) is displayed in a NetLinx Studio window.

Admin Menu

There are several configuration pages included in the Configuration Manager, all of which are accessed via the *Admin* drop-down menu. Click on an option in this menu to access each of the configuration pages:

Connecting to a NetLinx Master

Select **Device Configuration** from the Admin menu to open the *Master Connection* page. There are two tabs on this page: *Device Configuration* and *Master Connection*. Open the **Master Connection** tab (FIG. 4).

The options in this tab allow you to view and edit connection details for the NetLinx Master to which this NXB-KNX unit will be connected.

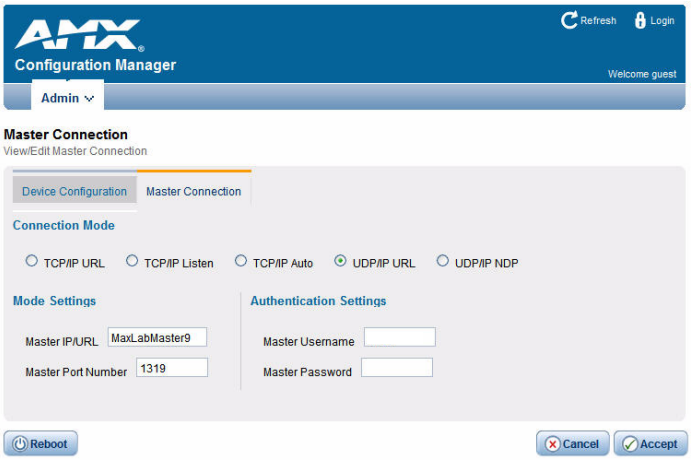

FIG. 4 Device Configuration page - Master Connection tab

To establish communication between the NXB-KNX and a specific NetLinx Master:

1. Enter the Master's IP/URL in the *Master IP/URL* text field.
2. The default *Master Port Number* assignment is **1319** - do not change this number.
3. Under *Authentication Settings*, enter the NetLinx Master's *Username* and *Password* (only required if the target NetLinx Master has Authentication enabled).
4. Press **Accept** to save changes.
5. Press **Reboot** to reboot the NXB-KNX. Once rebooted, the NXB-KNX should be in communication with the Specified NetLinx Master (indicated by a steady blink on the NXB-KNX Status LED).

Device Configuration tab

The *Device Configuration* tab is shown in FIG. 5. The current device number assigned to this NXB-KNX unit is displayed in the *Device Number* field.The version of the device Application currently loaded on this unit is displayed under *Current Application Information*.

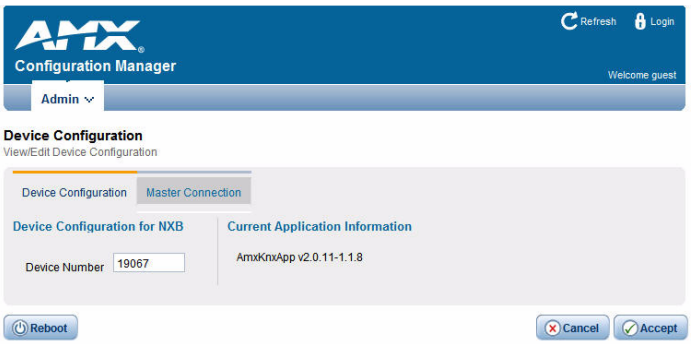

FIG. 5 Device Configuration page - Device Configuration tab

To Change the Device Number:

1. Enter a Device Number for this NXB-KNX unit in the **Device Number** text field.
2. Click **Accept** to save your changes.
3. Press **Reboot** to reboot the NXB-KNX and apply the new Device Number assignment.

Determining the IP Address of the NXB-KNX

NXB-KNX units feature a built-in zero-configuration networking client that allows you to determine the unit's IP address via NetLinx Studio v3.0 (or higher), or a similar zero-configuration client.

Zero-configuration (or *Zero-Config*) technology provides a general method to discover services on a local area network. In essence, it allows you to set up a network without any configuration.

***Note**: The NXB-KNX is set to **DHCP** by default.*

IP Settings

Select **IP Settings** from the Admin drop-down menu to open the *IP Settings* page. Use the options on the page to specify network/IP settings for this NXB-KNX unit.

DHCP:	Click to toggle DHCP on this unit (default = enabled). ***Note**: DHCP must be enabled in order for the zero-configuration client to detect the NXB-KNX on the network.*
Hostname:	Enter a Hostname for this unit (enabled only if DHCP is disabled.
IP Address:	Enter an IP Address for this unit (enabled only if DHCP is disabled).
Subnet Mask:	Enter a Subnet Mask for this unit (enabled only if DHCP is disabled).
Gateway:	Enter a Gateway for this unit (enabled only if DHCP is disabled).
Domain Suffix:	Enter the Domain Suffix for this unit.
DNS 1, 2, 3:	Enter up to three DNS addresses for this unit.
Reboot:	Click to initiate a system reboot. IP Settings changes only take effect after a reboot.

- Click **Accept** to save your changes, changes on this page take effect immediately.
- Click **Cancel** to cancel any changes.

One-Time Upgrade of the NXB-KNX to a Native NetLinx Device

The initial release of the NXB-KNX operated as an IP Device (as opposed to a native NetLinx device). Subsequent releases (including the current version) of the NXB-KNX operate as a native NetLinx device.

Older NXB-KNX units that are still using the initial Application and Firmware versions can be upgraded to allow them to function as a native NetLinx device.

Refer to the *NXB-KNX Operation/Reference Guide* for instructions on upgrading the NXB-KNX to a native NetLinx Device.

Additional Documentation

Refer to the *NXB-KNX Operation/Reference Guide* (available to view/download at www.amx.com) for additional configuration and NetLinx programming information, as well as Application and Firmware upgrades.

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